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SAVINGS, INVESTMENT AND THE GROWTH OF THE JAPANESE ECONOMY

Summary

Japan's high level of household savings compared to other countries, particularly the United States, is well-known. Yet, even though some experts are tempted to place savings high on the list of factors that explain Japan's postwar economic growth, the connection is not as clear as it superficially might appear. First, household savings rates, once measured in a comparable manner, do not differ as much between the United States and Japan as unadjusted figures suggest. Second, household savings are only one source of savings among several; the remaining sources explain an increasing amount of the savings rate gap between the United States and Japan. Third, savings rates are not necessarily linked to investment rates, which, in turn, have a changing relationship to the growth of the capital stock. Finally, changes in the capital stock do not correspond to economic growth in the same way as in past years. Although Japan's experience suggests the United States probably would benefit from measures to boost the rate of household savings, such benefits would be far less clear-cut than a quick comparison of personal savings rates would suggest.

Japan's Savings Rate in International Perspective

Critics of American economic policy often point to the apparently dismal U.S. personal savings rate over the past couple of decades as evidence that policies should be changed dramatically, perhaps by liberalizing individual retirement accounts or creating "family saving" incentives. Were Congress to encourage individual savings through enhanced IRAs or other means, the most

immediate result of such plans, if successful, would be to increase the household savings rate. The Department of Commerce put that figure at a seasonally adjusted 4.2 percent in the second quarter of 1991.

Table 1 shows how the U.S. figure compares with those of three other members of the Group of Seven industrial nations. (France, Italy and the United Kingdom are excluded because their methods of data collection differ significantly.) Among these countries America consistently has had the lowest rate, Japan the highest. (Of the 15 Organization for Economic Cooperation and Development nations using roughly comparable data collection methods, four -- Finland, Norway, the Netherlands and Sweden -- had lower rates than the United States in 1989; one -- Belgium -- had a rate clearly higher than Japan's.) While both American and Japanese rates have declined in recent years, even the lowest Japanese rate still is higher than the U.S. rate at its zenith.

Table 1: Household Savings Rates in Selected Countries, 1975-90

	United States	Japan	West Germany	Canada
1975	9.4%	22.8%	15.4%	12.7%
1980	7.3	17.9	13.1	13.6
1981	7.7	18.3	13.9	15.4
1982	7.0	16.5	12.9	18.2
1983	5.5	16.3	11.3	14.8
1984	6.3	15.8	11.6	15.0
1985	4.5	15.6	11.5	13.3
1986	4.3	16.1	12.4	10.7
1987	3.0	14.7	12.7	9.4
1988	4.3	14.3	12.7	10.0
1989	4.7	14.2	12.6	11.0
1990 (est.)	4.6	14.3	13.4	10.9

Source: Organization for Economic Cooperation and Development

Many experts have noted the different external factors that motivate Japanese households to save more, particularly reasons that have little to do with a desire for thrift per se. For example, bonus payments figure prominently in the annual compensation of Japanese employees; some evidence suggests that such lump-sum distributions are more likely to be saved than other forms of income, thereby boosting the Japanese rate vis-a-vis the American one, other factors equal. (Income tax refunds, more common in the United States, are a counterexample.)

For every critic who uses the figures in Table 1 to find economic -- or moral shortcomings -- in the United States, there is at least one critic who faults the data. A well-known analyst even has argued that, once appropriate adjustments are made, the two countries save about the same percentage of their

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disposable income.[1] Few experts believe, however, that proper measurement techniques would close the gap between the American and the Japanese savings rates. Yet, most of them would agree that the difference would not be as great as suggested in Table 1. Their comments distinguish between problems arising in the proper measurement of personal savings and whether individual savings are an adequate barometer of overall savings.[2]

First, these experts argue that the United States and Japan, while employing methods more similar than many other pairs of countries, differ substantially in how they calculate personal savings rates. Conceptually, personal saving is income that is not consumed. Both Japan and the United States recognize that long-lived assets wear out and, thus, in aging they impose a cost on their owners, albeit not an out-of-pocket expenditure; therefore, depreciation should be recognized as an expense, reducing savings. However, the United States values this expense at replacement cost, Japan at historical cost. In periods of inflation replacement cost exceeds historical cost. Since price increases have been the norm for both countries, Japan's depreciation of household expenses has been undervalued by U.S. standards, leaving savings overreported. This discrepancy could add 2 to 3 percentage points to the U.S. data in Table 1 or reduce the Japanese figures by an equal amount.[3] Other differences in measurement have less influence.

Second, many experts note that Japan and the United States both make what could be regarded as mistakes in the calculation of the personal savings rate by misjudging what is consumed or, in other words, what is saved. While, as noted above, long-lived assets create problems related to the determination of historical versus replacement cost, they also raise the question of deciding what is long-lasting and what is not. Expenditures for many durable goods are counted inappropriately as consumer spending. For example, money spent for furniture should not count as consumer spending in the year in which the furniture is purchased since it is "consumed" over a period of years, not during the quarter or the year to which the data refer; yet in savings statistics furniture is treated the same way as movie tickets (which typically are consumed within hours of being purchased). The effect of counting such durable goods expenditures as consumer spending is greater in the United States than in Japan, suggesting that a proper measure would boost the U.S. rate by as much as 2 to 3 percentage points vis-a-vis Japan.[4]

The combined effect of adjusting for methodological differences and questionable methodology is to reduce the gap between the U.S.-Japan savings rates shown in Table 1 by about half. Nonetheless, a gap remains. With the

[1]Kenichi Ohmae, "Americans and Japanese Save About the Same," Wall Street Journal, June 14, 1988.

[2]For a summary of many of the arguments concerning household savings in Japan and references to the original articles, see Charles Yuji Horioka, "Why is Japan's Household Savings Rate So High? A Literature Survey," Journal of the Japanese and International Economies, 1990, No. 4, pp. 51-54.

[3]Ibid., p. 53.

[4]Ibid., p. 53.

proposed adjustments the Japanese figure would fall to perhaps 11 or 12 percent, still comfortably above the similarly adjusted U.S. rate, which would rise only a couple of points at most above its 1989 level of 4.7 percent.

Most experts recognize that the figures on personal savings, no matter how well-calculated, are but one part of the savings equation. Economists typically divide the economy into three parts or more -- households, business and government, for example -- each of which may be a source of or a net user of savings.

For all their complexity household or personal savings are easier to measure than the others. Because individual savings also often contribute the largest amount to the country's savings pool, many analysts use personal savings as a proxy for overall savings. As Table 2 shows, however, household savings in Japan no longer rank as the overwhelming source of savings. Still, personal savings are far more stable in both countries than government or business savings. A discussion of changes in overall savings rates, thus, almost necessarily requires a look at the remaining sources.

Table 2: Distribution of Net Savings by Sector in Japan, 1976-89

	Households	Financial Firms	Nonfinancial Firms	Government	Private Nonprofit Organizations
1976	85.5%	3.1%	0.6%	9.8%	0.9%
1977	80.9	1.6	5.0	11.6	0.9
1978	74.7	1.7	14.8	7.1	1.8
1979	67.5	3.0	15.4	12.6	1.5
1980	69.1	3.3	12.2	14.1	1.2
1981	70.8	0.2	11.0	16.7	1.3
1982	68.3	1.5	12.4	16.3	1.5
1983	70.3	0.8	13.6	14.3	1.1
1984	64.0	-0.2	16.7	18.7	0.8
1985	59.3	-0.8	17.4	23.5	0.6
1986	60.8	-4.2	20.2	22.5	0.7
1987	53.7	-6.2	21.2	30.6	0.6
1988	48.3	-4.8	21.4	34.6	0.5
1989	48.0	-6.1	17.8	39.4	0.9

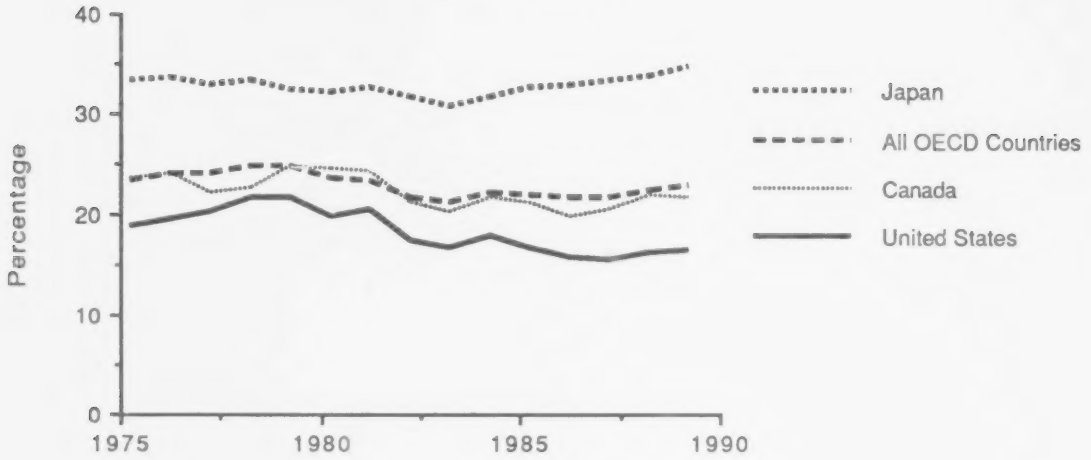
Note: For each sector savings are net of depreciation but not net of investment.

Source: Calculated from data in Economic Planning Agency, Annual Report On National Accounts (Tokyo: Okura-sho Insatsu-kyoku, 1991).

Figure 1 shows how overall savings rates differ among the United States, Japan, Canada and the 24 member countries of the OECD taken as a whole. The overall U.S. savings rate has experienced several sharp declines, while Japan's rate has been roughly stable since 1975, climbing in the late 1980s. (Canada's rate roughly has paralleled that of the United States, although the figure itself has remained higher.) The relatively poor U.S. performance largely is a

Figure 1: Overall National Savings Rate

(percentage of GNP or GDP)



Source: Organization for Economic Cooperation and Development

consequence of soaring federal budget deficits, which have resulted in substantial government dissaving. In contrast, as Table 2 shows, government savings in Japan represent an increasing share of total net savings. There, a substantial portion of government savings finances government investment.

As in measurements for personal savings, methodological choices required to generate overall savings rates are open to dispute. Some experts have argued that the overall U.S. savings rate approximates that for Japan once a consistent and correct approach is taken toward measuring Japanese and American savings. As with household savings, however, the differences only narrow; they do not disappear.[5]

Some of the apparent differences in American and Japanese rates arise from the treatment of government spending and saving. Government purchases, like consumer expenditures, are partly for durable goods, such as tanks. Like their equivalents in the private sector, these durable purchases arguably should not be counted as consumption since they can be expected to have several years of useful life. If they are excluded, government savings rates are higher. Yet some government investment, such as that for tanks, clearly has a different impact on future levels of productivity than spending on factories or education, suggesting that the case for its inclusion is less than clear-cut. Figure 1 is based on OECD measurements, which count military expenditures but do not include as consumption a broad array of government spending on long-lived assets, such as bridges. As such, this gauge represents a compromise

[5]Fumio Hayashi, "Is Japan's Savings Rate High?" Quarterly Review (Federal Reserve Bank of Minneapolis), Spring 1989, pp. 3-9.

between very inclusive and very exclusive views of government expenditures on durables.

The Congressional Budget Office has argued that only a very inclusive view of government savings, one that considers the impact of military investment, would alter significantly the level of government savings. That outcome would result in part because depreciation charges would reduce net government savings. CBO also noted that none of the alternative measurements it evaluated would affect the trend of U.S. government savings, which generally have moved downward since about 1970.[6] In other words, reclassification of some government expenditures from current spending to investment would not alter significantly the downward trend of U.S. aggregate savings as shown in Figure 1.

Relationship of Savings and Investment

In everyday use the words "savings" and "investment" are used almost interchangeably, as in the assertion "I got a good return on my savings (investment) last year." Economists, too, find the concepts closely related but employ a special meaning for each word. The production of goods and services in every economy is part of a process in which workers and others get income that in total equals what they pay in aggregate to purchase goods and services. Savings refer to decisions by buyers not to spend their entire incomes to consume the goods or the services that the economy and, ultimately, they themselves have produced. To an economist investment relates to the fact that not all the goods and the services produced domestically or made available from foreign sources are consumed in the period in question. As such, it has relatively little to do with the concept as understood on Wall Street.

In some cases the decision to invest and to save are the same side of a coin. For example, the profits that a corporation decides not to disburse to shareholders represent corporate savings. If these undistributed profits are used to buy long-lived equipment, the decision represents investment since some of the output of the economy (the equipment) is not consumed in the current period. More often, however, the investment and the savings decisions are made by different economic entities. In the above example, if the firm used borrowed money rather than retained earnings, it still would be making an investment decision, but those who add enough to their checking or savings accounts to finance the bank loan would make the savings decision. In a closed economy or for the world as a whole, savings and investment necessarily are equal, even if the decisions to invest and to save may be made by different people. Any diversion of current production from current consumption -- in other words, investment -- must be matched by decisions somewhere to defer using a similar portion of income in the current period -- that is, savings.

Financial institutions and capital markets enable savings and investment decisions to be made increasingly independently. This suggests that Japan's high personal savings rate does not necessarily imply a high individual investment rate; the savings can go into the bank rather than into personal investments like a new house. Furthermore, with the advent of global capital markets,

[6]For details, see Congress of the United States, Congressional Budget Office, The Federal Deficit: Does It Measure the Government's Effect on National Saving? (Washington: Congressional Budget Office, 1990), pp. 21-25.

savers in one country can finance investments in another nation. Hence, one might expect that national savings as shown in Figure 1 have relatively little to do with national investment if funds flow freely across national boundaries. Conversely, if funds are prevented from free movement, then savings and investment are linked closely.

In the case of Japan the question of the linkage between savings and investment is of obvious importance. High investment is an engine of long-term economic growth. New plant and equipment as well as investments in research and development or education are factors making tomorrow's economy more productive. Are a high rate of investment and subsequent rapid economic growth inevitable given Japan's savings rate? Surprisingly, perhaps, expert opinion is mixed on this question.

One way to assess the situation is to look at how interest rates differ by country. If they tend to move together and are more or less equal after taking into account exchange rate expectations, risk and a few other factors, then one can assume that temporarily high rates in one country attract funds from nations with relatively low rates. If Japan tended to have relatively low rates because of a large supply of savings, for example, those funds would be attracted overseas, provided that supply and demand conditions there created high returns on savings. Given the equality-based view of interest rates, supply and demand would push up rates in the country from which the funds came and lower them in the country into which they flowed in a continual process until rates were roughly equal and had moved the same amount in each country. Experts who have studied worldwide interest rates have found some evidence that interest rates move in the way predicted. The natural inference to draw is that high domestic savings do not necessarily imply high national investment.

Unfortunately for this theory. studies of the direct connection between savings and investment often have reached an opposite conclusion. On balance, nations with high savings apparently do have high levels of investment. Tamim Bayoumi of the International Monetary Fund summarized and confirmed these findings and offered as an explanation the notion that government policies either could restrict the flow of savings across national boundaries directly or result in fiscal decisions that could create a connection between overall savings and overall investment.[7] Regarding fiscal policies, Mr. Bayoumi presumably meant that high rates of business and household savings encourage governments to increase public spending, a portion of which becomes public investment. In this way overall savings and investment are linked. In contrast, private savings and private investment barely are related, according to his research. Hence, private savings do not lead inevitably to higher private investment.

The situation in Japan is more complex. According to Mr. Bayoumi, private investment and private savings there were each higher on average between 1965 and 1986 than in any of the other nine industrial nations (including the United States) that he used for comparison. This result would seem to suggest that private investment in Japan is high because of high private savings, after all. (Mr. Bayoumi himself does not draw this inference. however.)

[7]Tamim Bayoumi, "Saving-Investment Correlations," IMF Staff Papers, June 1990, pp. 360-387.

Other evidence, however, casts doubt on this apparent result. To compare Japan and other nations, Mr. Bayoumi used average values that included observations from the 1960s when Japanese capital markets arguably were much more closed than they are today. However, his own time-series data for Japan showed that the relationship between private savings and investment began to weaken in the mid-1970s while that between total savings and investment began to erode in the 1980s. The data in Table 3 hint at the same breakdown in this relationship. To the extent that savings exceed investment, funds flow abroad. Between 1980 and 1986 the difference between savings and investment widened in Japan, with lending to the rest of the world increasing.

Table 3: Japanese Savings and Investment Data, 1976-89

	Net Savings/ GNP	Net Investment/ GNP	Adjustments*/ GNP	Net Lending to Rest of World/ GNP
1976	20.2%	19.4%	-0.1%	0.6%
1977	19.6	18.5	0.4	1.5
1978	20.0	18.7	0.3	1.7
1979	19.0	20.0	0.1	-0.9
1980	18.3	19.5	0.1	-1.0
1981	18.3	18.0	0.1	0.4
1982	17.1	16.5	0.0	0.7
1983	16.2	14.4	0.0	1.8
1984	17.2	14.4	0.0	2.8
1985	18.1	14.5	0.0	3.6
1986	18.1	13.9	0.0	4.2
1987	18.5	14.5	-0.4	3.6
1988	19.7	16.4	-0.5	2.7
1989	19.5	17.1	-0.5	2.0

*Statistical discrepancy and capital transfers.

Note: Net lending to rest of world -- the result of net savings minus net investment plus adjustments -- is equivalent to the external surplus.

Source: Calculated from data in Economic Planning Agency, Annual Report On National Accounts (Tokyo: Okura-sho Insatsu-kyoku, 1991).

Research based on rates of return in Japanese financial markets also supports the conclusion of increased capital mobility.[8] Studies of the

[8]See, for example, Mustafa N. Gultekin, N. Bulent Gultekin and Alessandro Penati, "Capital Controls and International Capital Market Segmentation: The Evidence from the Japanese and American Stock Markets," Journal of Finance, September 1989, pp. 849-869, and Robert Alan Feldman, Japanese Financial Markets (Cambridge, Massachuesetts: MIT Press, 1986), pp. 181-185.

relationship between Japanese and foreign markets tend to show that after 1980 (the year in which the Foreign Exchange and Foreign Trade Law was overhauled) interest rates in Japan and the United States -- or dollar-denominated securities in the Euromarket -- converged once proper adjustments are made for exchange rate movements.

In short, at least for Japan, the apparent contradiction between studies of savings-investment patterns and those of international interest rate differentials does not exist. Both types of statistics suggest that Japanese financial markets have been integrated into the world economy to a significant degree since 1980. The implied result is that Japanese savers increasingly seek the highest return anywhere in the world. An extreme view of this decoupling argument would suggest that Japanese savings and investment are both high only by coincidence. While few experts would be willing to go that far, most would agree that the savings-investment linkage weakened significantly, if did not disappear, in the 1980s. This analysis implies that high savings are less tightly linked now than in the past to high economic growth since the path to rapid growth leads through investment, which is becoming less directly tied to domestic savings.

Relationship of Investment to the Capital Stock

Even if one assumes that high savings lead to high investment in Japan, so what? Only if the investment generates a larger or more productive stock of capital will the economy grow as a result.

Investment and its relationship to increases in the capital stock depend in part on the rate of depreciation. To the extent that capital wears out or becomes obsolete, any given level of investment increases the capital stock less than it would otherwise. The Council of Economic Advisers has pointed out that equipment -- which wears out relatively rapidly compared to structures and other fixed assets -- has risen in recent years in the United States as a share of the capital stock. For this reason, even though gross investment actually rose in the 1980s relative to gross national product, net investment fell relative to net national product (GNP less depreciation).[9]

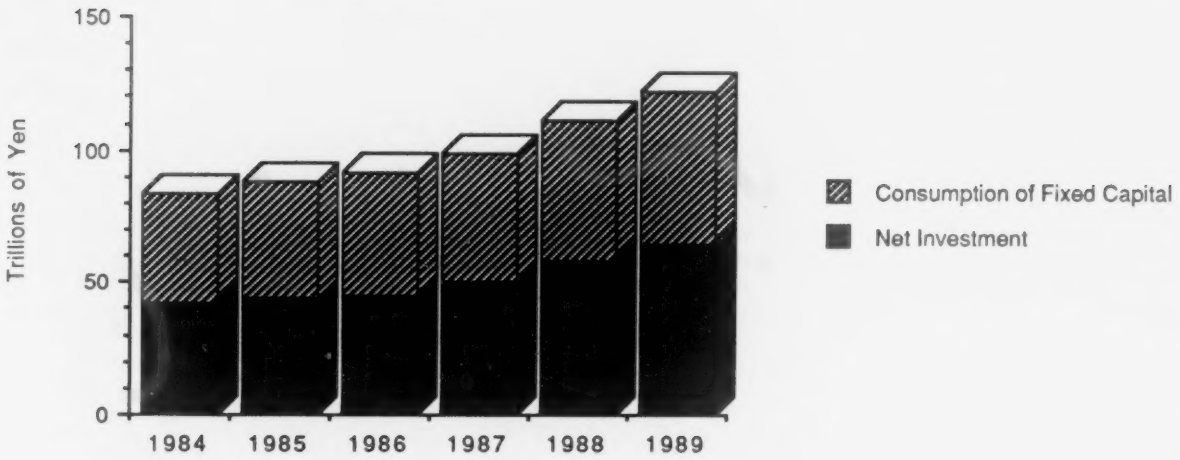
A related phenomenon has occurred in Japan. Equipment's share of nonresidential fixed investment increased steadily throughout the 1980s; in the most recent period for which comparable data are available (1983 to 1989), the ratio rose from 17.4 percent to 22.2 percent. The large stock of computers and other fast-depreciating equipment has trimmed significantly the increase in net investment spending despite a rapid expansion of gross investment expenditures. (See Figure 2 where gross investment equals the sum of net investment and depreciation charges.) But unlike the U.S. case, where the share of net investment spending in the economy has eroded, the share of net investment expenditures in Japan increased from 16.7 percent of estimated NNP in 1984 to 19.9 percent in 1989. Partly as a result, Japan's net capital stock has grown at a relatively rapid pace in recent years (see Figure 3).

Some evidence suggests, however, that increases in the capital stock deliver less in the form of increased output than they did a generation ago (or

[9]Economic Report of the President (Washington, D.C.: Government Printing Office, 1990), p. 119.

Figure 2: Domestic Fixed Capital Formation in Japan

(in current prices)



Source: Economic Planning Agency

perhaps even last year). Kazuo Sato, a professor at Rutgers University, calculated capital-output ratios in Japan's primary and secondary industries in a 1987 report; his figures showed that the two series climbed sharply between 1970 and 1975 as firms, faced with tighter labor markets, began substituting capital for labor. Through 1983, the most recent year for which Mr. Sato had data, the ratios remained on the plateaus reached in 1975.[10] This result suggests that a given level of Japanese output required more capital -- and, ultimately, more investment and savings -- than in the past.

Using a slightly different yardstick, Nomura Research Institute recently reported that Japan's ratio of capital to output rose virtually every year between 1966 and 1990, more than doubling over the period.[11] Assuming that this long-run trend continues, the data imply that the high level of capital spending by Japanese firms in recent years will generate a smaller growth in potential output than that produced by past increases in the capital stock. As will be discussed below, this trend has significant implications for the pattern of future Japanese economic growth.

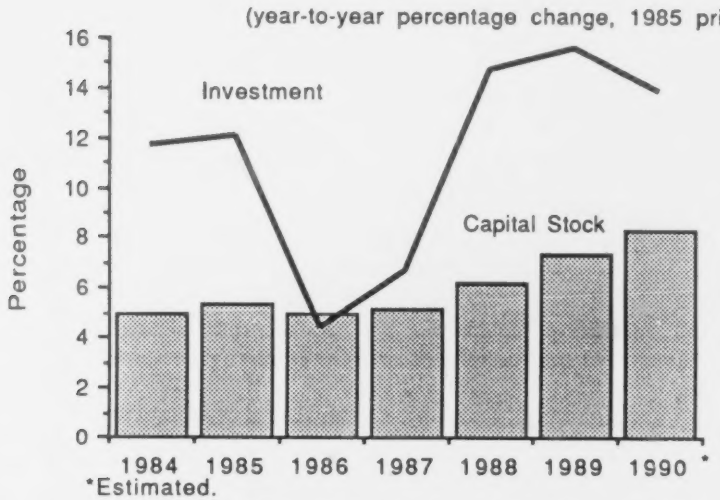
The Bottom Line

The connection between capital and output completes the description of the linkage of personal savings to economic growth. Several conclusions emerge

[10]Kazuo Sato, "Saving and Investment" in Kozo Yamamura and Yasukichi Yasuba (eds.), The Political Economy of Japan, Volume 1. The Domestic Transformation (Stanford, California: Stanford University Press, 1987), pp. 165-168.

[11]NRI Quarterly Economic Review, August 1991, p. 6.

Figure 3: Real Net Private Nonresidential Fixed Capital Stock and Investment in Japan



*Estimated.

Note: Data refer to capital stock in financial, nonfinancial and nonprofit institutions plus gross private plant and equipment investment.

Source: Economic Planning Agency

from this discussion. First, savings come from many sources -- both domestic and foreign. One reason the United States has a low overall savings rate vis-a-vis Japan is because the rate of government savings is low, a result of big federal budget deficits since the start of the 1980s. This finding suggests that, insofar as domestic savings affect growth, American policymakers who attempt to draw lessons from the Japanese experience need to cast their net widely, looking not just at household patterns of thrift but at business decisions and government fiscal policy.

Second, the linkages between savings and investment, between investment and growth in the capital stock and between the capital stock and output all have been changing in Japan since the early 1980s, if not before. In every case the effect has been to weaken the linkage. No evidence points toward these trends slowing, let alone reversing. This argument suggests that, other factors equal, the Japanese economy increasingly will be swimming upstream in its efforts to maintain growth. Of course, savings still remain high in Japan, and the relationships that lead to growth, while weaker than in the past, have not disappeared. In addition, savings are hardly the only mechanism for maintaining a solid economic performance; in many other factors, such as education and training, Japan excels. In short, while Japan will have to buck the current to maintain solid growth rates, it is a strong swimmer.

Outlook for Savings and Investment

Through the end of 1991 and next year Japanese policymakers will have to guide the economy through some particularly difficult stretches, many of which involve changes in savings and investment behavior. The most immediate problem is the overhang from the investment surge of the late 1980s. Having increased

to nearly 20 percent of GNP, plant and equipment spending could play a destabilizing role in the economy as a whole. As the economy appeared to be entering a slow growth period this past spring, concerns centered on business investment, which actually declined in the April-June 1991 quarter from the previous three-month period (see JEI Report No. 36B, September 27, 1991). Should plant and equipment spending remain weak, the Bank of Japan is likely to relax further monetary policy in an effort to bring interest rates to a level that makes investment attractive.

Absent a substantial move toward a looser monetary policy, the prospects for Japanese plant and equipment spending are uncertain. The high levels of outlays in the late 1980s were financed in part by equity-linked bonds. According to data collected by Salomon Brothers Inc., in the peak year of FY 1989 roughly one-third of the external funds obtained by Japanese nonfinancial corporations were generated this way. Firms were able to raise money at low rates because potential investors were attracted by the prospect that equity purchase rights would be valuable if the stock market continued the rapid advance it then was experiencing. After the stock market's 1990 decline and continued weakness in 1991, this source of finance has all but disappeared.

In addition, Y14 trillion ($103.7 billion at Y135=$1.00) of equity-linked bonds will mature during the FY 1992-FY 1993 period, an amount substantially higher than the Y8.7 trillion yen ($64.4 billion) raised on capital markets in FY 1990. For issuing firms, which had hoped to redeem their outstanding bonds with the proceeds from sales of stock, refinancing is an unexpected burden regardless of interest rates. As it is, firms will have to refinance at much higher rates unless the stock market stages a strong recovery that restores the attractiveness of the bonds' equity component.

Nor are other sources of funds attractive. Bank loans are both less available and more expensive as banks struggle with their own problems. Furthermore, since corporate profits have declined this year compared to last year and are unlikely to recover significantly in the near term, the prospects for increased use of retained earnings to finance investment appear dim.

Faced with unattractive alternatives, firms will have to consider reducing their holdings of liquid assets, like cash or cash equivalents. By mid-1991 Japanese firms were running down these assets fairly rapidly; ultimately little could be left in the cookie jar for future expansion. By a Salomon Brothers' calculation the multiple of corporate liquidity to quarterly business investment had dipped from a high of more than 15 in 1988 to under 13 by the end of 1990; other data suggest that the ratio has continued to fall this year. In late September Nihon Keizai Shimbun, the big Japanese economic daily, reported that large Japanese companies even were resorting to selling some of their financial crown jewels -- expensive Tokyo real estate -- in an effort to raise funds. Sapporo Breweries Ltd., for example, was hoping to raise Y100 billion ($740.7 million) in this way. In short, financing investment has become a difficult proposition in the early 1990s in Japan.

Despite these problems, forecasts of corporate plant and equipment spending for the April 1991-March 1992 fiscal year are relatively rosy. On the same day that the Economic Planning Agency announced that seasonally adjusted real plant and equipment spending declined in FY 1991's first quarter from the

last three months of FY 1990, the Japan Development Bank announced the results of its August survey of corporate investment intentions for all of FY 1991. The JDB survey suggested that capital spending could rise 10.7 percent over FY 1990's level, a healthy jump even if one shaves off about 1.5 percentage points to account for higher capital goods prices.

The JDB survey results are in line with other recent surveys. For example, a mid-September survey conducted by Nihon Keizai Shimbun showed that large firms expected to spend 7 percent more in FY 1991 on plant and equipment than in FY 1990. If firms realize these forecasts, the growth in capital spending would be far below the 16.5 percent nominal jump registered in FY 1990, although still strong by almost all standards. Nevertheless, both the JDB and the Nikkei surveys probably incorporate firms' expectations that interest rates will drop significantly; at this juncture that result is not guaranteed.

Over the longer term additional factors will affect both savings and investment in Japan. One factor that may be less of a drain on savings than it would appear at first glance is the country's changing demographic profile. The average age of the population is advancing rapidly, in part because the elderly are increasing in numbers and in part because relatively few children are being born (see JEI Report No. 46A, December 7, 1990). This development could portend a decline in savings since the group that typically has high savings (those aged 35 to 44) is shrinking in relative size.

Recent research, however, casts some doubt about a marked demographic impact on savings rates. The decline in savings in Japan as shown in Table 1 and Figure 1 represents a drop in the savings of each age group and is not the result of shifting demographics, according to two researchers from the Brookings Institution and one from Towson State University.[12] The future could resemble the past in this respect. Nor will Japan's increasing numbers of elderly necessarily pull down the savings rate as much as once thought. Recent research suggests that the elderly may well avoid dissaving.[13] However, their savings rate probably will drop compared to their wage-earning years.

Many experts remain convinced, however, that demography has been and will continue to be important in explaining Japan's savings rate. Charles Yuji Horioka of Osaka University examined over 30 factors, including those relating to the age distribution of the population, in an effort to explain Japan's relatively high personal savings rate. He concluded that demographic shifts belong in the group of important factors and that the personal savings rate will drop significantly over the next decade as the population ages.[14]

[12]Barry Bosworth, Gary Burtless and John Sabelhaus, "The Decline in Saving: Evidence from Household Savings," Brookings Papers on Economic Activity, 1991, I, pp. 183-256.

[13]See Robert Dekle, "Do the Japanese Elderly Reduce Their Total Wealth? A New Look with Different Data," The Journal of the Japanese and International Economies, September 1990, pp. 309-317.

[14]Horioka, op. cit., p. 85.

More of a consensus may exist for the role that demography will play in investment patterns. A decline in the number of new entrants in the labor force after 1992 and a probable drop in the total size of the labor force by the turn of the century imply that demand for plant and equipment spending will rise as firms attempt to substitute capital for labor. This trend would accelerate the process described earlier and could result in the capital-output ratio rising even further -- to the extent that firms can find the savings and can afford to fund such a substitution.

Both the (possibly) shrinking supply of savings and the surging demand for investment are likely to result in upward pressure on Japanese interest rates during the rest of this decade. To the extent that Japan's capital market is integrated with those abroad, interest rates may rise only modestly there. In that case, however, Japan's supply of surplus savings to overseas markets could shrink significantly.

Conclusion

Although some experts regard Japan's savers as the not-so-secret weapon that has enabled the Japanese economy to grow rapidly during much of the postwar period, the reality is more complicated. Once adjustments are made to the personal savings rate, differences between Japan and the United States -- two countries with seemingly very different savings rates -- narrow, although a gap still remains. Moreover, other aspects of Japan's savings picture, including business and government savings, plus an unusually close linkage between savings and investment until a decade ago, also have played a major role in Japan's ability to invest in plant and equipment; this, in turn, has had the effect of boosting economic growth.

In coming years Japan will not enjoy the same advantages arising out of its high savings rate as it did in the past. The increasingly international demeanor of capital markets will draw savings out of Japan as never before in response to what appear to be tiny interest rate differentials. This will reduce the pool of domestic funds that Japanese firms can tap. Japan's aging society will increase the demand for investment funds over the rest of this century at the same time that the country will face the possibility of a declining supply of savings. Long-term trends suggest that investment funds will not have the same effect on output as they did previously. In short, while Japan's households may well remain world-class savers, their savings will not appear as abundant as they have in the past.

For further information, contact Douglas Ostrom.

Dean Rogers provided research assistance.

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The views expressed in this report are those of the author and do not necessarily represent those of the Japan Economic Institute.

NOTE

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